

模块参数

参数名称	参数值	备注
模块型号	AD8361	
模块类型	射频对数检波器	
模块供电电压	DC5V	
模块供电电流	7mA(max)	
输入信号形式	单端	
输入电压范围	-25dBm -- +5dBm	
输入频率范围	DC-2.5GHz	
输入阻抗	50欧	
输出电压范围	0.05V-4V	以实测值为准，不同模块之间有差异
输入信号特点	输入耦合	可为连续正弦波或者脉冲，脉冲测量需要修改电路，模块默认为连续均值检波。
输出电流	2mA(max)	输出为电压信号，一般不带电流。
模块动态范围	优于30dB	
模块重量	7.2g	
模块保护	无	无反接保护，无限流保护
模块重量	7.2g	
模块规格	33*17*10mm	长*宽*高-PCB尺寸
模块屏蔽	有屏蔽盖	
模块发热因素		供电电压过大损坏芯片或者模块有损坏
模块工作温度	-40℃--+85℃	工业级
模块特点		
应用范围		发射机功率测量，接收机强度测量等
模块接口类型		SMA信号输入输出，XH2.54防呆电源座

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模块描述

AD8361输出为线性响应直流电压，转换增益为7.5V/V均方根值。可添加一个外部滤波器电容，提升平均时间常数。AD8361主要用于简单和复合波形的真功率测量，特别适合测量高波峰因素(高峰值-均方根比)信号，比如CDMA和W-CDMA。

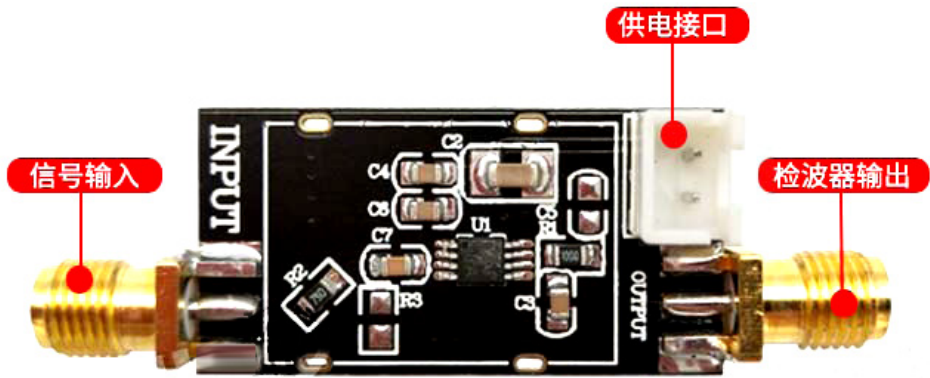
AD8361具有三种工作模式，支持多种模数转换器要求:

- 1、基准电压源接地模式，源为零。
- 2、内部基准电压源模式，可将输出偏置为低电平以上350mV。
- 3、提供基准电压源模式，可将输出偏置为 $V_S/7.5$ 。

AD8361工作温度范围为-40°C至+85°C,采用8引脚MSOP和6引脚SOT-23封装。采用专有的高IT硅双极性工艺制造。

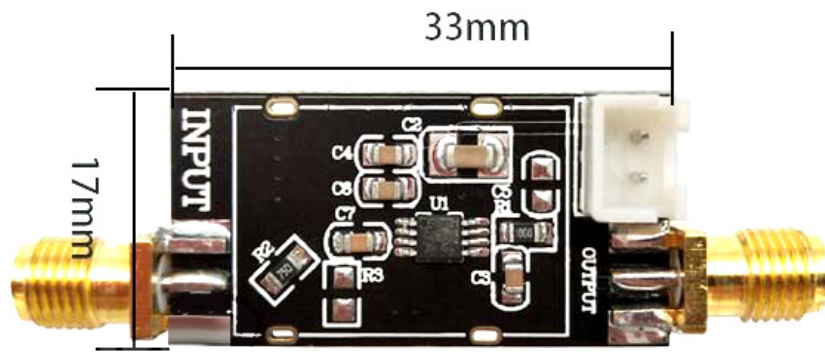
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模块接口图



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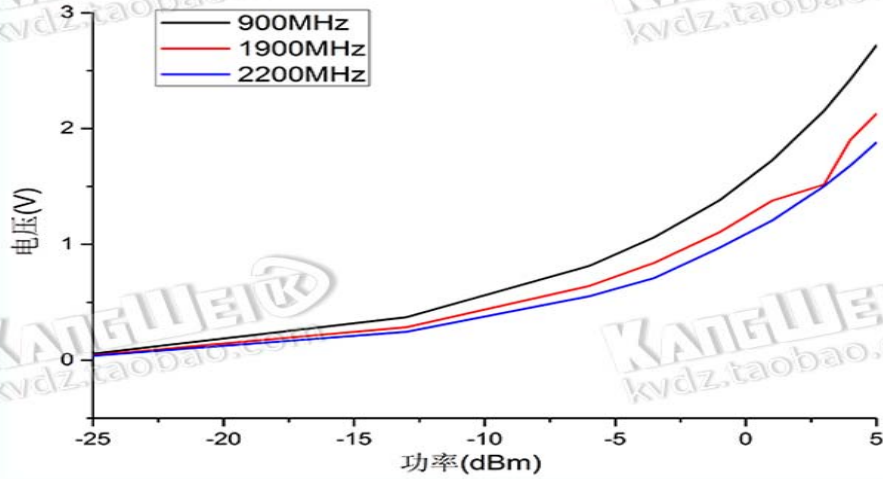
模块尺寸图



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模块使用注意事项

- (1) 检波器模块最大输入功率为+5dBm，检波器动态范围30dB。
- (2) 模块无反接、无限流保护，使用模块时一定要注意不要反接，否则容易损坏芯片或模块。
- (3) 模块为低功耗模块，供电电源不超过5.5V。
- (4) 由于模块是高精度器件，为了避免不必要的干扰，建议使用线性电源供电。
- (5) 输入信号建议使用SMA接口，接触不良或劣质的线材可能导致信号衰减或者噪声过大，使得测量不准确。
- (6) 检波器模块在不同频率下的响应和动态范围会差别，不同的模块之间也有差异，属于正常现象，并非模块问题



AD8361 带宽100Hz-2.7GHz 动态范围30dB

功率 (dBm)	频率 (MHz)			
	100	900	1900	2200
5	4.041	2.542	1.759	1.428
-1	2.028	1.309	0.927	0.758
-7	1.034	0.701	0.489	0.399
-13	0.543	0.367	0.256	0.209
-15	0.435	0.297	0.207	0.17
-20	0.226	0.156	0.111	0.093
-25	0.148	0.104	0.076	0.065
-27	0.121	0.086	0.064	0.056

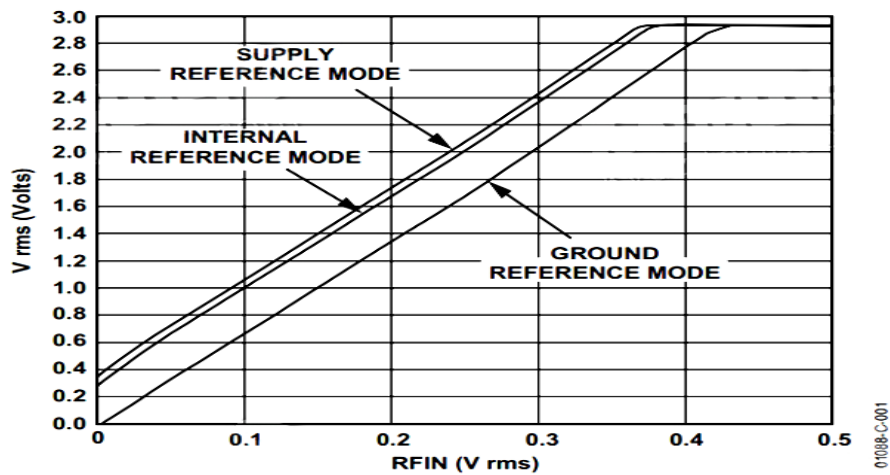


Figure 1. Output in the Three Reference Modes, Supply 3 V, Frequency 1.9 GHz (6-Lead SOT-23 Package Ground Reference Mode Only)

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常见问题解答

Q: 测量脉冲功率是无反应? 输出是一条直线。

A: 模块默认功能为功率检波, 不能检测脉冲或者瞬时功率大小, 需要将C3电容换为小电容值才能检测脉冲和瞬时功率, 一般对瞬时要求越高, 那么可将C3电容去掉。

Q: 买了3个模块, 同一检测条件输出电压有差异, 是正常现象么?

A: 模块之间存在个体差异, 详情实测图为典型数据, 具体参数以实测为准。

Q: 可以做快速检波或者解调吗?

A: 在去掉C3电容的情况下可以做快速检波或者解调。



LF to 2.5 GHz TruPwr™ Detector

Data Sheet

AD8361

FEATURES

- Calibrated rms response
- Excellent temperature stability
- Up to 30 dB input range at 2.5 GHz
- 700 mV rms, 10 dBm, re 50 Ω maximum input
- ± 0.25 dB linear response up to 2.5 GHz
- Single-supply operation: 2.7 V to 5.5 V
- Low power: 3.3 mW at 3 V supply
- Rapid power-down to less than 1 μ A

APPLICATIONS

- Measurement of CDMA, W-CDMA, QAM, other complex modulation waveforms
- RF transmitter or receiver power measurement

GENERAL DESCRIPTION

The AD8361 is a mean-responding power detector for use in high frequency receiver and transmitter signal chains, up to 2.5 GHz. It is very easy to apply. It requires a single supply only between 2.7 V and 5.5 V, a power supply decoupling capacitor, and an input coupling capacitor in most applications. The output is a linear-responding dc voltage with a conversion gain of 7.5 V/V rms. An external filter capacitor can be added to increase the averaging time constant.

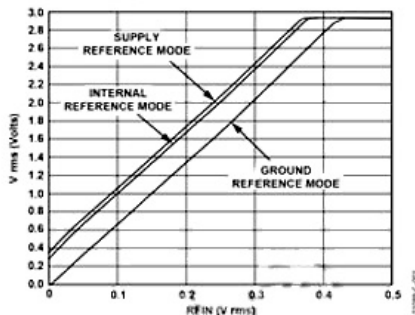


Figure 1. Output in the Three Reference Modes, Supply 3 V, Frequency 1.9 GHz (6-Lead SOT-23 Package Ground Reference Mode Only)

FUNCTIONAL BLOCK DIAGRAMS

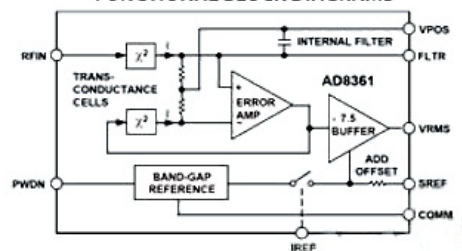


Figure 2. 8-Lead MSOP

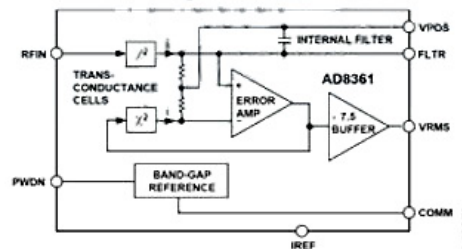


Figure 3. 6-Lead SOT-23

The AD8361 is intended for true power measurement of simple and complex waveforms. The device is particularly useful for measuring high crest-factor (high peak-to-rms ratio) signals, such as CDMA and W-CDMA.

The AD8361 has three operating modes to accommodate a variety of analog-to-digital converter requirements:

1. Ground reference mode, in which the origin is zero.
2. Internal reference mode, which offsets the output 350 mV above ground.
3. Supply reference mode, which offsets the output to $V_{DD}/7.5$.

The AD8361 is specified for operation from -40°C to $+85^{\circ}\text{C}$ and is available in 8-lead MSOP and 6-lead SOT-23 packages. It is fabricated on a proprietary high γ silicon bipolar process.

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